

## REMARKS/ARGUMENTS

It is believed that this Amendment, in conjunction with the following remarks, place the application in immediate condition for allowance or at least presents the claims in better form for consideration on Appeal. Accordingly, entry of this Amendment and favorable consideration of the application are respectfully requested in view of the foregoing amendments and the following remarks. Claims 1, 7-12, 18-23, 29-34, 39 and 45-71 are pending in the application. Claims 1, 12, 23, 34 and 39 are independent claims.

Claims 45-71 are added by this Amendment. Claims 45-68 substantially correspond to claims that were canceled by the 11/18/2009 Amendment, and are now re-introduced in light of the Examiner's withdrawal of the allowable subject matter. Claims 69-71 are new to the prosecution of this application. Claims 69-71 are each supported at least by block 404 of FIG. 4 and its corresponding description within the Specification (e.g., in [0048], "...comparing the likelihood of the most likely codeword with a threshold (block 404)..." and "...a maximum-likelihood (ML) decoder may be used to identify a most likely codeword (W) and an associated likelihood (L) of the presence of that codeword on the R-RICH..." and "...apply a maximum likelihood detector to determine the presence of packets on a discontinuous transmission channel...", respectively).

### *Claim Rejections – 35 USC § 112, 2<sup>nd</sup> Paragraph*

Claims 1, 7-12, 18-23, 29-34 and 39 are rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have amended the above claims to overcome this rejection.

### *35 U.S.C. § 103(a) – Chen in view of Kwon*

Claims 1, 7-12, 18-23, 29-34 and 39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,208,699 ("Chen") in view of U.S. Patent No. 7,440,485 ("Kwon"). Applicant respectfully traverses this art grounds of rejection.

By the present Amendment, Applicant has removed the claim language for which Kwon is relied upon. For this reason, Applicant's remarks below are primarily directed to Chen.

Chen is directed to a mechanism for detecting zero-rate frames in a communications system. Chen is assigned to the assignee of the subject application (i.e., Qualcomm) and also shares a common inventor with the subject application (i.e., Tao Chen).

As an initial matter, Applicant notes that the claims are not broadly directed to decoding codewords of a channel with a maximum likelihood decoder. This has already been admitted by the Applicant to be well-known in the art by the Specification itself. Rather, what is being claimed is implementing a maximum likelihood decoder specifically to a “rate indicator channel” to determine packet-presence thereon. For example, Applicant directs the Examiner to Paragraph [0048] of the Specification of the subject application, which states that

While maximum likelihood decoders are well known in the art and have been implemented in the past to assign likelihoods to continuous bit streams, it is a novel approach to apply a maximum likelihood detector to determine the presence of packets on a discontinuous transmission channel.

*(e.g., see [0048] of the Specification)*

In other words, a burst oriented channel (and its corresponding rate indicator channel) are bursty in nature, in the sense that data is not always transmitted thereon but is rather transmitted in ‘bursts’ or sporadically. As noted in the above-excerpt, maximum likelihood decoders are conventionally only used on channels where transmissions are substantially continuous, such that the decoding-goal is determining which codeword is present, and not whether a codeword is present in the first place.

Turning to the Examiner’s interpretation of the claims with respect to Chen, the Examiner reads the limitation of “rate indicator channel” upon the control channel described by Chen (e.g., see Pages 3-4 of the 3/05/2010 Office Action). Applicant submits that the control channel described by Chen is not a rate indicator channel as claimed.

As noted above, the claimed “rate indicator channel” is described as “corresponding” to a burst oriented channel. Thus, it will be appreciated that the rate indicator channel is bursty in nature, or associated with discontinuous transmissions on the burst oriented channel. The rate indicator channel is introduced in the Background section and is itself well-known (although maximum likelihood decoders are not conventionally applied thereto), for example, “a corresponding rate indicator channel which signals a base station of the transmit format of the burst oriented channel and drives the power control loop” is described at [0008] of the Background section.

Turning to Chen, Chen makes no mention of burst oriented channels or bursty traffic. Accordingly, there is no suggestion that the control channel would correspond to a “burst oriented channel” as claimed, and thereby the control channel of Chen cannot be said to be a rate indicator channel.

Also, there are a number of secondary indications in Chen that teach away from the control channel being implemented as a rate indicator channel that the Applicant has attempted to capture explicitly with respect to dependent claims 50 and 71.

For example, claim 50 recites “wherein the packet does not include cyclical redundancy check (CRC) bits” (e.g., see [0008], “While a CRC may allow error detection in data transmissions, in systems having channels which transmit sporadically and are burst oriented the overhead for utilizing a CRC on their corresponding rate indicator channel may be too high” and/or [0026], “no CRC information is provided in packets on the rate indicator channel.”). By contrast, the control channel of Chen clearly uses CRC bits. For example, Chen states “As shown in FIG. 2, a message generator 212 generates and provides control messages to a cyclic redundancy check (CRC) and tail bit generator 214. Generator 214 appends a set of CRC bits used to check the accuracy of the decoding at the mobile station. The CRC bits are parity bits generated based on the contents of the particular control message” (e.g., see Col. 4, lines 34-40 of Chen).

Further, claim 71 recites “wherein the rate indicator channel is a discontinuous transmission channel” (e.g., see [0048], “...it is a novel approach to apply a maximum likelihood detector to determine the presence of packets on a discontinuous transmission channel”). By contrast, the control channel of Chen appears to be described as transmitting frames at regular intervals even if there is no data to send, such that frames are transmitted continuously even in the absence of actual data. For example Chen states “[t]or an IS-2000 compliant system, transmission occurs in 20 msec intervals, with each interval comprising one 20 msec frame, four 5 msec frames, or a portion of a longer frame” and “[a]s currently specified by the IS-2000 submission, a zero rate frame can be transmitted on a 5 msec frame or a 20 msec frame on the dedicated control channel (e.g., when there are no control messages to send)” (e.g., see Col. 6, lines 41-65 of Chen). Thus, zero-rate frames are sent even when no data is required to be sent, such that transmission on the control channel is continuous.

In view of the remarks above, Applicant respectfully submits that the Examiner has mischaracterized the control channel as a “rate indicator channel” as claimed. The control channel is not configured to control a burst oriented channel, and appears to be required to function in a continuous-transmission mode (as opposed to a bursty or discontinuous transmission mode). The claim language, preamble and Specification support this interpretation of the “rate indicator channel” as claimed, and for the reasons discussed above the control channel of Chen cannot qualify as the claimed “rate indicator channel” (e.g., by contrast see 404-406 of FIG. 5 of the subject application, whereby packet-presence is detected even for zero-rate packets).

Applicant has also reviewed the secondary reference of Kwon (which was relied upon for claim language no longer present in any of the independent claims), and notes that Kwon also makes no mention of burst-oriented channels or discontinuous transmission modes. Kwon provides no apparent rationale for applying a maximum likelihood decoder to the “rate indicator channel” as claimed.

Thereby, Applicant respectfully submits that independent claims 1, 12, 23, 34 and 39 distinguish over the combination of Chen in view of Kwon. As such, claims 7-11, 18-22, 29-33 and 45-71, dependent upon independent claims 1, 12, 23 and 34, respectively, are likewise allowable over the combination of Chen in view of Kwon at least for the reasons given above with respect to the independent claims.

Applicant respectfully requests that the Examiner withdraw this art grounds of rejection.

**CONCLUSION**

In light of the remarks and amendments contained herein, Applicant submits that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

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